

The State of Children's Health in Ohio and Making Evidence-Based Decisions

Plenary Session at the
Ohio Public Health Epidemiology Symposium

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Where Are We With MCH Epidemiology?



MCH Epidemiology: 2000-2008

- The number of registrants at the MCH epidemiology conference grew from 400 to 533.
- The number of CDC/HRSA MCH epidemiology state assignees grew from one (in 1987) to thirteen.



MCH Epidemiology: 2000-2008

- MCH epidemiology had the second greatest increase in state-based epidemiologists (after bioterrorism) from 2001-2006.
- The number increased from 106 to 171.
- The percent of states able to provide substantial to full capacity in MCH epidemiology increased from 35% (in 2001) to 52% (in 2006).



MCH Epidemiology: 2000-2008

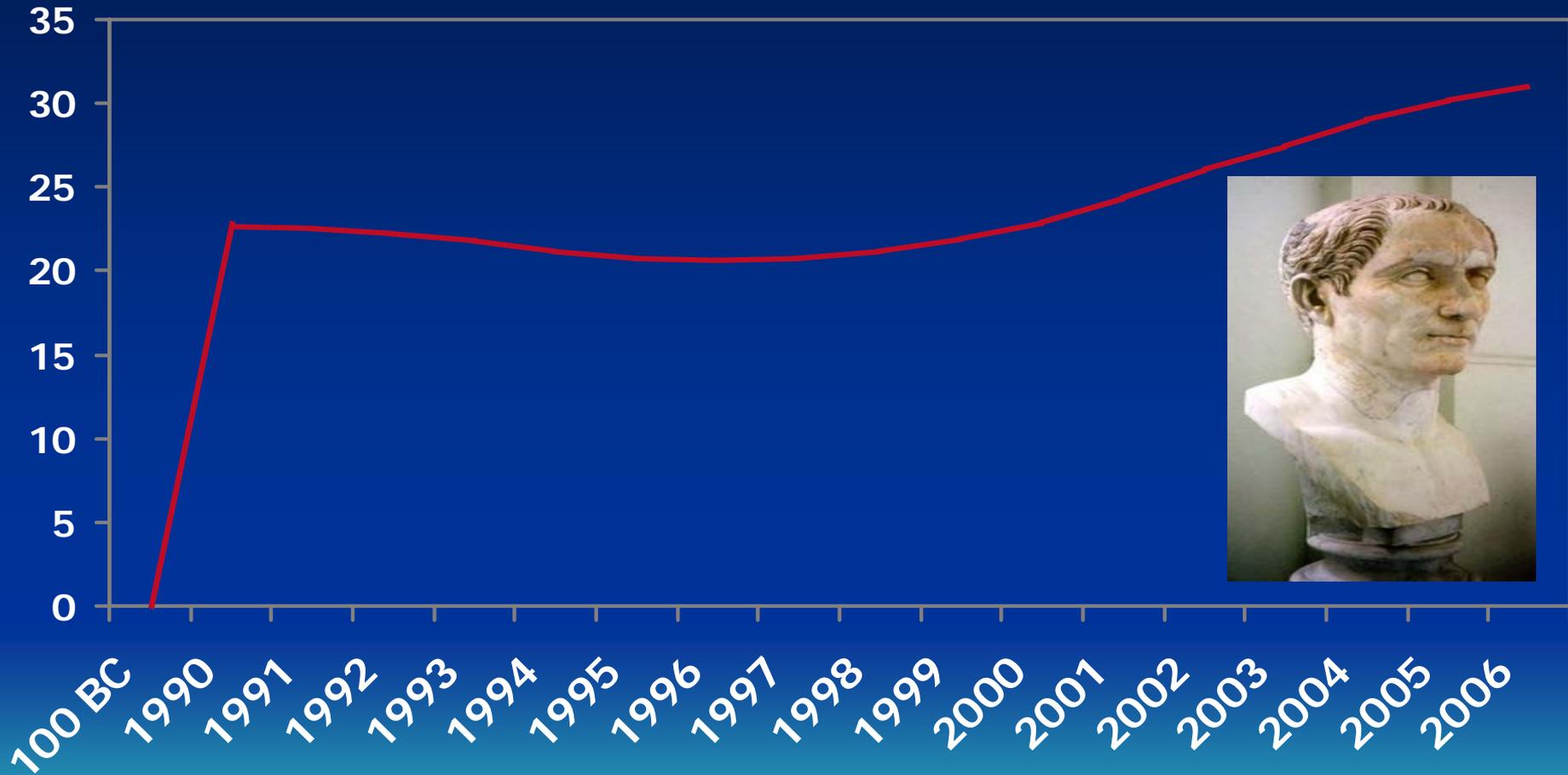
- Almost 400 people have been trained in epidemiology methods through the HRSA/CDC course in MCH epidemiology.
- Another 500 have received the two day trainings before the MCH Epidemiology Conference.



And yet...



Rate of Cesarean Delivery 100 BC - 2006



Menacker et al, Seminars in
Perinatology, 2006; NVSS, 2004-2006

Percent Preterm Births in the US, 1990-2006



Source: National Vital Statistics System,
NCHS, CDC, 1990-2006

Percent Low Birth Weight Births in the US, 1990-2006



Source: National Vital Statistics System,
NCHS, CDC, 1990-2006

**Are having more
people and data
enough?**



**How do we convert
information into
more effective
programs?**



- **Gathering the Best Evidence**

- **Applying the Evidence to Programs and Policies**



Evidence-Based Medicine

- Health care practices based on review of current best evidence on the effectiveness of a test, drug, surgery or other medical practice.
- Collect and analyze all of the research studies conducted on a particular intervention.
- Evidence is then graded.
- Best evidence is clinical trials and meta-analysis. Weakest is case reports.



Differences between Medicine and Public Health

	Public Health	Medicine
Primary Focus	Populations	Individuals
Emphasis	Prevention	Diagnosis
	Health Promotion	Treatment
	Whole Community	Whole Patient
Paradigm	Interventions aimed at Environment, Human Behavior and Lifestyle, and Medical Care	Medical Care



Definition of Evidence-Based Public Health

- “EBPH is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of communities and populations in the domain of health protection, disease prevention, health maintenance and improvement.”

Jenicek (1997)

- So what is “best evidence”?

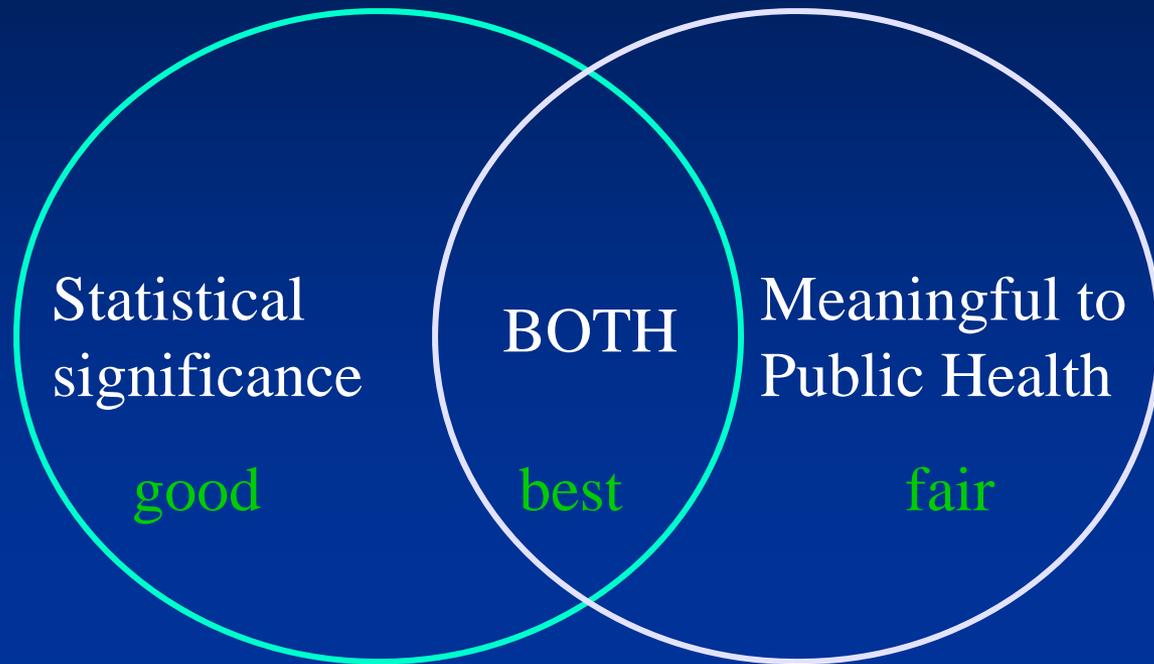


Best Evidence

- Makes sense (it's relevant)
- Unbiased
- Available
- Statistically significant
- Significant to public health
- Leads to correct decisions



Evidence



We have been taught to accept statistical significance. If large samples (as in many cases), we are bound to have it, even if it is not meaningful.

Steps of Evidence-Based Public Health

- Develop an initial statement of the issue
- Search the scientific literature and organize information
- Quantify the issue using sources of existing data
- Develop and prioritize program options; implement interventions
- Evaluate the program or policy

Different Sources of Evidence in Public Health

- “Soft information”: review processes, personal information, gut feelings
- “Adequate information”: routinely collected information, case review programs
- “Strong information”: active surveillance, and some clinical studies
- “Very strong”: randomized control trials



Why the Concern?

- Knowledge is rapidly expanding
- Large amount of published scientific literature
- Larger amounts of unused (stored) data
- Lack of guidelines for the EBPH process



**So why isn't
evidence-based
decision-making
used more often?**



How are Decisions Often Made?

- Decisions on policies and programs are often made based on:
 - Personal experience
 - What we learned in formal training
 - What we heard at a conference
 - What a funding agency required/ suggested
 - What others are doing



Evidence and Public Health Decision Making

- Good news
 - Strong evidence on the effect of many policies/ programs aimed to improve public health, like immunizations, breastfeeding promotion or smoking cessation
 - Major efforts underway to assess the body of evidence for wide range of public health interventions, like the Cochrane Collaborative or the AMCHP Best Practices program.

What Works to Improve the Public's Health?

- Bad news
 - Many public health professionals are unaware of this evidence
 - Some who are aware don't use it
 - Many existing disease control programs have interventions with insufficient evidence –while others use interventions with strong evidence of effectiveness
 - Lack of use of effective interventions can adversely affect fulfilling mission and getting public support
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Early Attempt at Evidence-Based Work in Maternal and Child Health



Evidence-Based Maternal and Child Health

- True or false?
- For women who are experiencing problems with their pregnancy, bed rest is effective in preventing preterm labor.



Evidence-Based Maternal and Child Health

- FALSE:
- Obstetric practices for which there is little evidence of effectiveness in preventing or treating preterm labor include bed rest.
 - Goldenberg, Obstetrics and Gynecology, 2002



**Are evidence-based
approaches only
applicable to the
health field?**



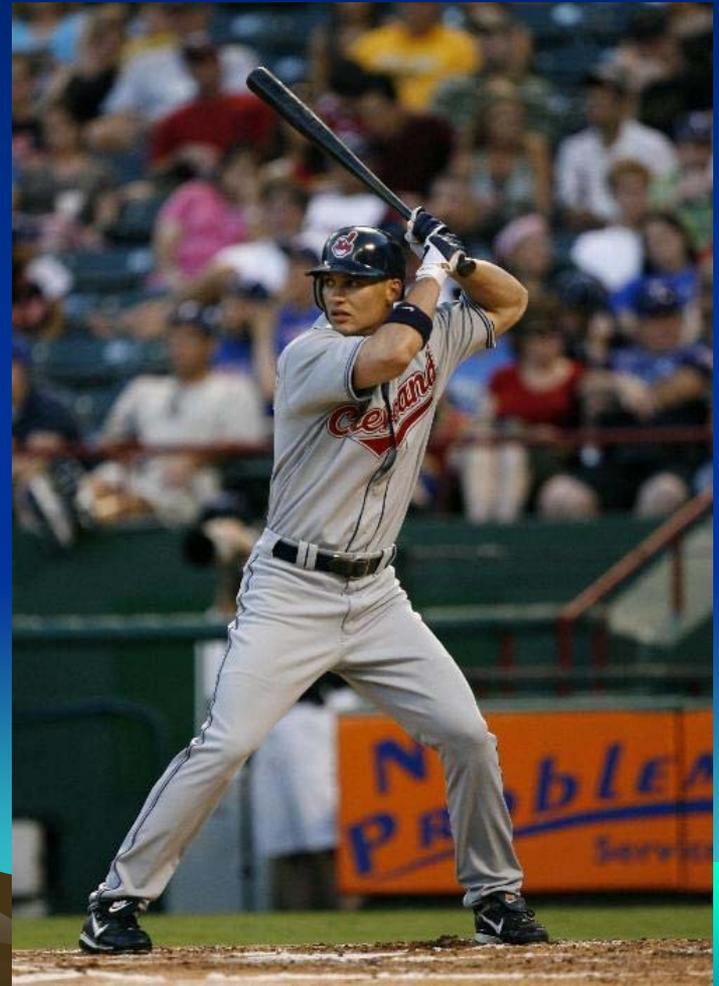
Evidence-Based Baseball

- Evidence-based approach by Oakland Athletics
 - Relied on theoretically relevant statistics and scientific approach to baseball.
 - Achieved winning seasons despite being burdened with severe budget constraints.



Evidence-Based Baseball

- What is the biggest predictor of runs scored by a team over a season:
 - Number of home-runs?
 - Team batting average?
 - On-base percentage?
 - Number of steals?



Evidence-Based Baseball

- Answer: On-base percentage.
 - Lewis, Moneyball, 2003.



**Are evidence-based
approaches
sufficient?**

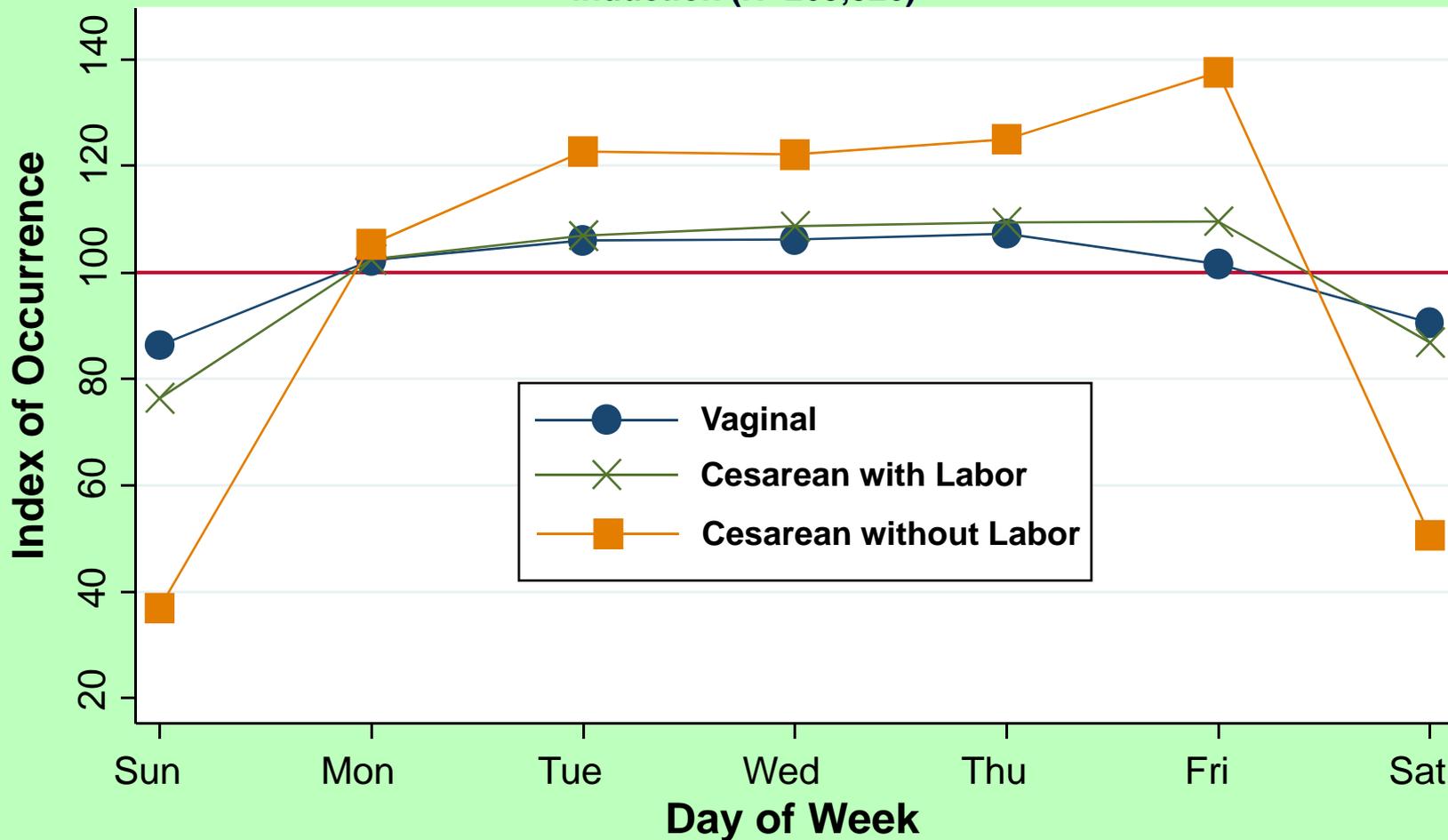


- **Not always**
- **Sometimes MCH outcomes are affected by issues in other areas**

Day of the Week: Delivery Route

Index of Occurrence of Delivery Route: **Florida** 2004-2006*

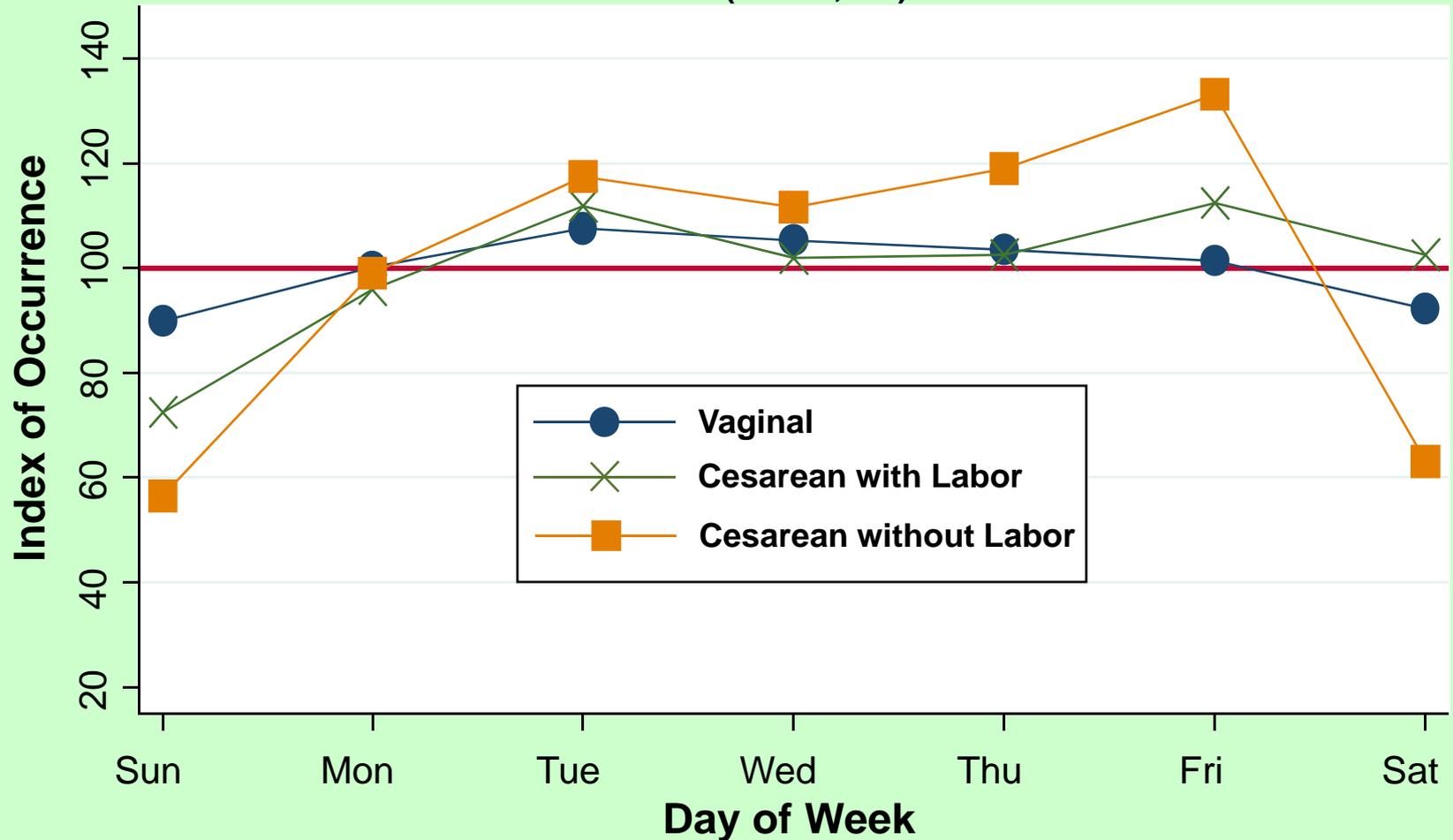
Singletons, 34-41 Weeks, No Previous Cesarean, Low Documented Risk, and No Medical Induction (N=263,326)



Day of the Week: Late Preterm

Index of Occurrence of Late Preterm: **Florida** 2004-2006*

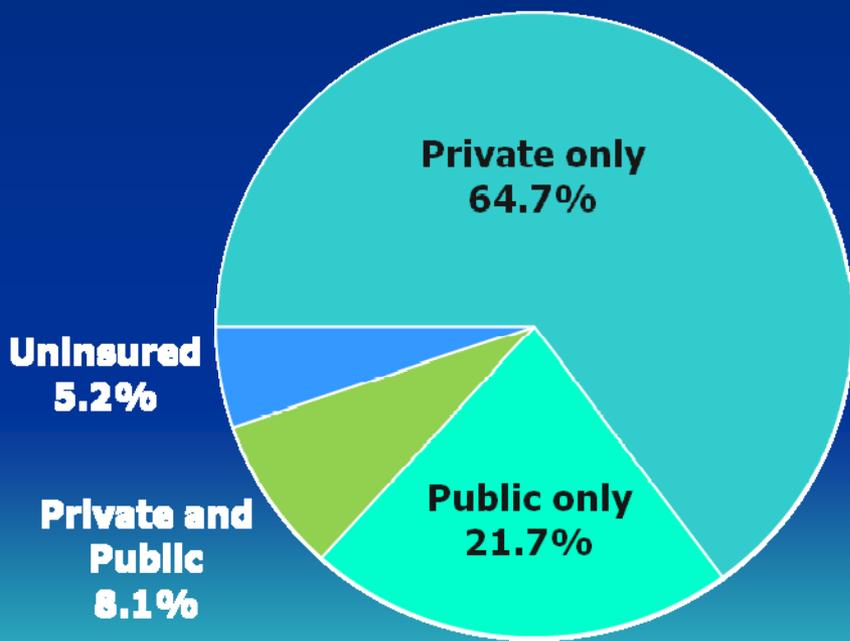
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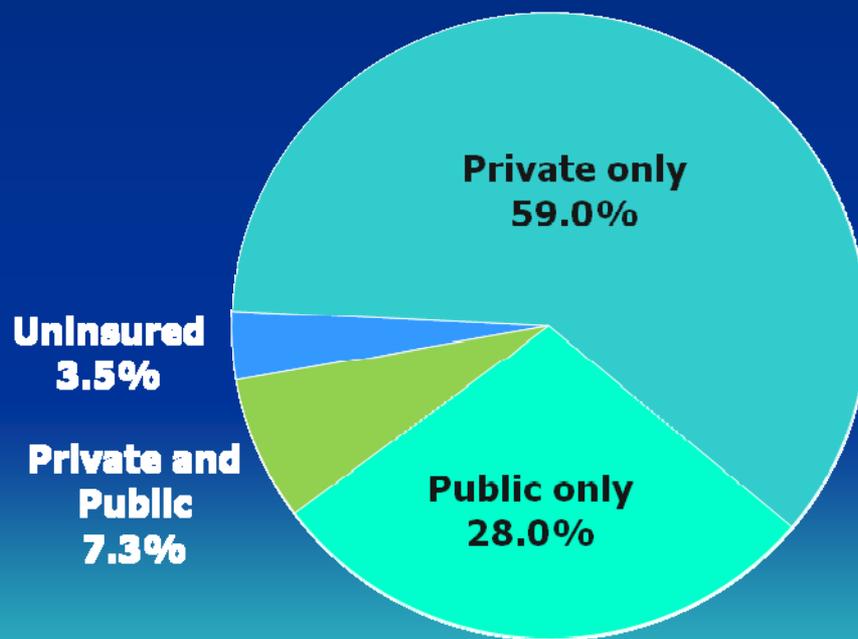
Health Insurance Coverage

Percentage of CSHCN, by Type of Health Insurance

2001



2006



From Evidence-Based Public Health to Translational Research

- Translational Research—Public Health
 - “Translating research into practice; ie ensuring that new treatments and research knowledge actually reach the patients or populations for whom they are intended and are implemented correctly.”

Sudden Infant Death Syndrome: Providing Appropriate Translation

- Growing evidence that reduction of SIDS related to infant sleep position
- “Back to Sleep” campaigns in the US
- Significant declines in the SIDS rate from 1989-1998
- Mostly in the white population
- Was the evidence appropriately targeted for different audiences?

Model of Evidence to Translation

Stage 1:
Review of Evidence-Based
Recommendations

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graph TD; A[Stage 1: Review of Evidence-Based Recommendations] --> B[Stage 2: Consultations on Recommendations for Practice]; B --> C[Stage 3: Synthesis and Development of Recommendations];
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Stage 2:
Consultations on Recommendations for Practice

Stage 3:
Synthesis and Development of Recommendations